Features

- Advanced Trench MOSFET Process Technology
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Halogen Free. “Green” Device (Note 1)
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Dual N-Channel Power MOSFET

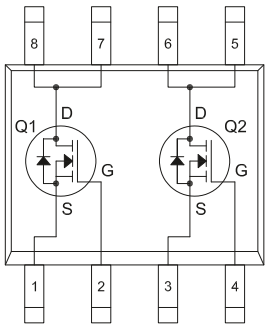
Maximum Ratings

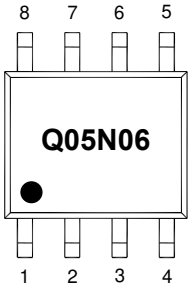
- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 73.5°C/W Junction to Ambient(Note2)

Parameter	Symbol	Rating	Unit
Drain -Source Voltage	V_{DS}	60	V
Gate -Source Volltage	V_{GS}	±20	V
Drain Current-Continuous	I_D	5	A
Pulsed Drain Current(Note3)	I_{DM}	30	A
Power Dissipation	P_D	1.7	W

Note:
1.Halogen free "Green” products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2.The value of $R_{\theta JA}$ is measured with the device mounted on 1 in2 FR-4 board with 2oz.
3.Repetitive Rating: Pulse width limited by maximum junction temperature.

Internal Structure and Marking Code





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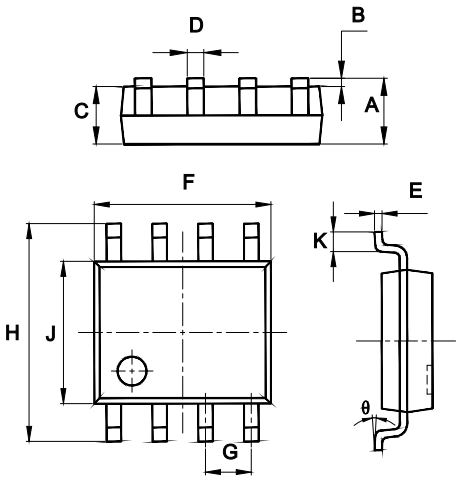
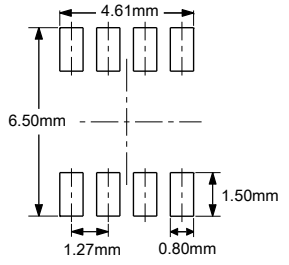


DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.053	0.069	1.35	1.75	
B	0.004	0.010	0.10	0.25	
C	0.053	0.061	1.35	1.55	
D	0.013	0.020	0.33	0.51	
E	0.007	0.010	0.17	0.25	
F	0.185	0.200	4.70	5.10	
G	0.050		1.270		TYP.
H	0.228	0.244	5.80	6.20	
J	0.150	0.157	3.80	4.00	
K	0.016	0.050	0.40	1.27	
θ	0°	8°	0°	8°	

Suggested Solder Pad Layout



ELECTRICAL CHARACTERISTICS (Ta=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=250μA	60			V
Gate-Threshold Voltage(Note4)	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	1.0		3.0	V
Gate-Body Leakage Current	I_{GSS}	V_{GS} =± 20V, V_{DS} =0V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =60V, V_{GS} =0V			1	μA
Drain-Source On-Resistance(Note4)	$R_{DS(on)}$	V_{GS}=10V, I_D=5A		37	45	mΩ
Forward Transconductance(Note4)	g_{fs}	V_{DS}=5V, I_D=4.5A	11			S
Dynamic Characteristics(Note5)						
Input Capacitance	C_{iss}	V_{DS}=30V,V_{GS}=0V, f=1MHz		500		pF
Output Capacitance	C_{oss}			60		
Reverse Transfer Capacitance	C_{rss}			25		
Switching Characteristics(Note5)						
Total Gate Charge	Q_g	V_{DS}=48V,V_{GS}=10V,I_D=15A		12		nC
Gate-Source Charge	Q_{gs}			4.1		
Gate-Drain Charge	Q_{gd}			4.5		
Turn-on Delay Time	$t_{d(on)}$	V_{DD}=30V,V_{GS}=10V,I_D=2A,R_G =3Ω, R_L=6.7Ω		5.0		ns
Turn-on Rise Time	t_r			2.6		
Turn-off Delay Time	$t_{d(off)}$			16.1		
Turn-off Fall Time	t_f			2.3		
Drain-Source Diode Characteristics						
Diode Forward Voltage(Note4)	V_{SD}	V_{GS}=0V, I_s=20A			1.2	V
Diode Forward Current(Note3)	I_S				20	A
Reverse Recovery Time	t_{rr}	I_F=20A,di/dt=100A/us(Note4)		35		nS
Reverse Recovery Charge	Q_{rr}			53		μC
Forward Turn-On Time	t_{on}	Intrinsic turn-on time is negligible (turn-on is dominated by LS+LD)				

Note: 4. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.
5.Guaranteed by design, not subject to production.

Curve Characteristics

Fig. 1 - $R_{DS(ON)}$—I_D

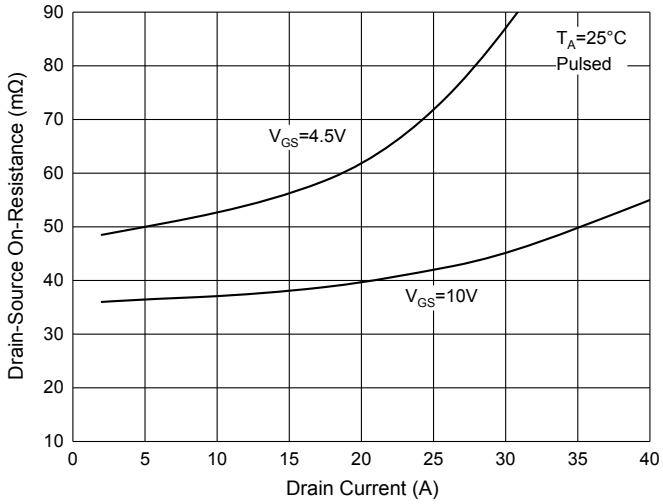


Fig. 2 - Gate Charge

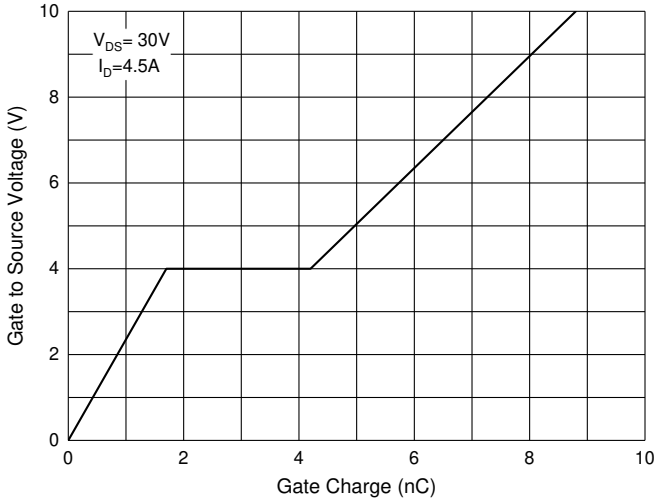


Fig. 3 - Capacitance Characteristics

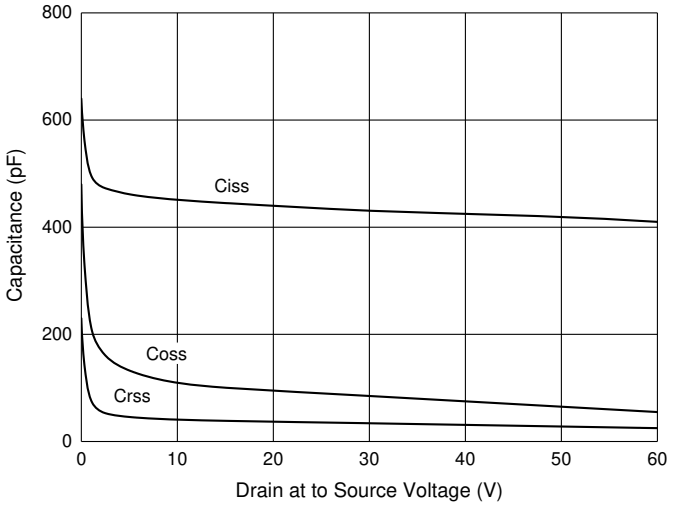
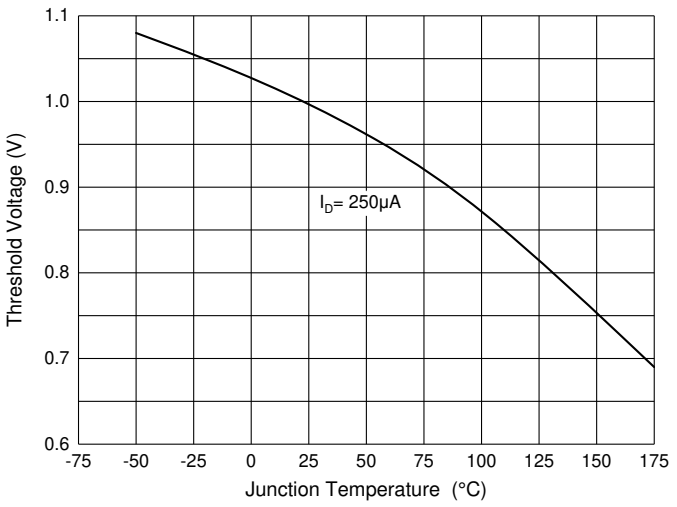


Fig. 4 - Threshold Voltage



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel:4Kpcs/Reel